UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,130	02/13/2002	Sailesh C. Suthar	10559-762001 / P12905	8877

20985 7590 05/05/2004

FISH & RICHARDSON, PC
12390 EL CAMINO REAL
SAN DIEGO, CA 92130-2081

EXAMINER	
DEO, DUY VU NGUYEN	
ART UNIT	**PAPER NUMBER**
1765	

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/076,130	SUTHAR ET AL.	
	Examiner	Art Unit	
	DuyVu n Deo	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-16 and 22-24* is/are allowed.

6)☒ Claim(s) *17-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *25 and 26* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 17, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Birdsley et al. (US 6,210,981).

Birdsley describes an etching process comprising: etching a backside of a semiconductor chip, which has at least one doped well 478, formed proximate a front side of the chip (col. 7, line 22-25; fig. 5); monitoring the image of the backside of the chip during etching until the image changes from light to dark when approaching the well 478 (claimed monitoring the

backside during etching until the doped well becomes visible) (col. 7, line 25-60); stopping the etching after the image has changed to a desired level of darkness (claimed stopping the etching after the doped well becoming visible).

Referring to claim 19, the etching is performed with FIB (col. 7, line 24, 25).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Birdsley as applied to claim 17 above, and further in view of Talbot et al. (US 5,821,549).

Unlike claimed invention, Birdsley is silent about the type of the ion beam for the etching. However, he describes using a gas that is reactive with the substrate. Talbot describes XeF2 (claimed xenon difluoride flux) that is reactive with the substrate for the etching (col. 6, line 52-57). It would have been obvious at the time of the invention for one skill in the art, in light of Talbot, to use XeF2 for the etching of the chip because it reacts and etches the substrate with a reasonable expectation of success.

5. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Birdsley as applied to claim 19 above, and further in view of Ring et al. (US 6,281,025).

Unlike claimed invention, Birdsley is silent about the type of the ion beam for the etching. However, he describes using a gas that is reactive with the substrate. Ring describes Ga+ ions (claimed gallium focused ion beam) that is reactive with the substrate for the etching

(col. 5, line 15-29). It would have been obvious at the time of the invention for one skill in the art, in light of Ring, to use XeF2 for the etching of the chip because it reacts and etches the substrate with a reasonable expectation of success.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Birdsley as applied to claim 17 above, and further in view of Stevens (US 2002/0155645).

Unlike claimed invention, Birdsley doesn't describe etching comprises coupling the chip to ground potential. Stevens teaches etching using the FIB where the substrate (conductive layer) is coupled to ground potential (paragraph [0026], [0029]). It would have been obvious for one skill in the art to etch the substrate in light of Stevens because he teaches coupling the substrate to ground potential in order to dissipate excessive charge (paragraph [0029]).

Allowable Subject Matter

7. Claims 1-16, 22-24 allowed because applied prior art doesn't describe or suggest the step of determining when a first portion of the backside over one of the first and second wells differs from a second portion of the backside over the other of the first and second wells or determining when a portion of the backside over the n-well differs from a portion of the backside over the p-well.

Election/Restrictions

8. Applicant's election with traverse of claims 1-24 in Paper filed in 4/5/04is acknowledged. The traversal is on the ground(s) that, applicants submit that it is wrong to state that the apparatus of the Group 11 claims can be used to practice another and materially different process that the method of the Group l claims because apparatus claims essentially performs the process of claim 1. This is not found persuasive because this does not response to the reason of the restriction that

the apparatus can be used for the deposition process. Applicant has not shown that the apparatus can not used with a deposition process. Also, the method and apparatus would require different searches and entail different patentability determinations, restriction for examination purposes as indicated is proper (MPEP 2112.01 and 2112.02).

The requirement is still deemed proper and is therefore made FINAL.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 571-272-1462. The examiner can normally be reached on 6:00-3:30; with alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 571-272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DVD
4/30/04